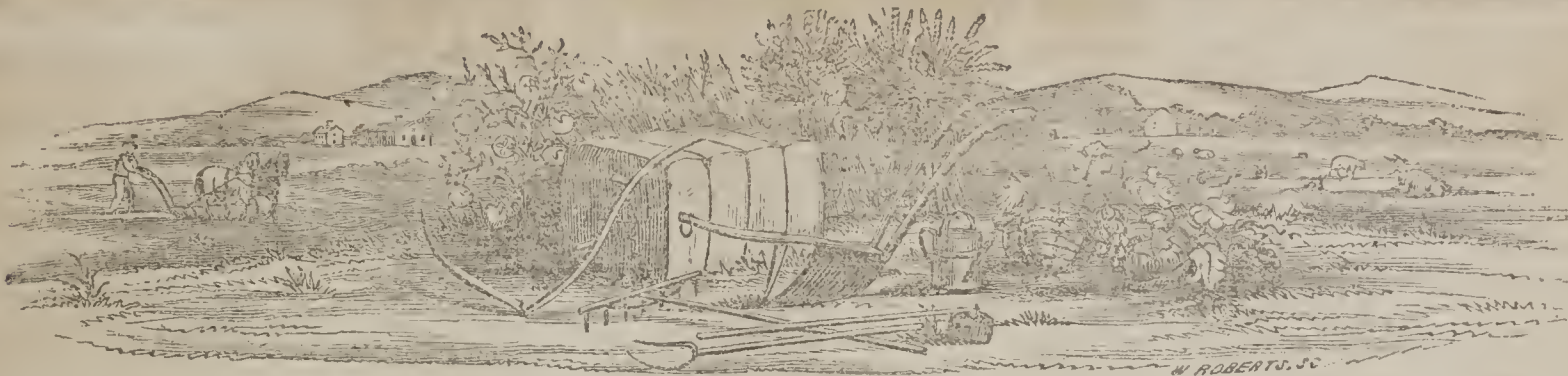


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# FARMER AND PLANTER.

DEVOTED TO AGRICULTURE, HORTICULTURE, MECHANICS, DOMESTIC AND RURAL ECONOMY.

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### Manures.—No. 4.

*Their Uses, History, Modes of Preparation, Comparative Value, Rationale of their Causes of Action, Etc. Etc.*

BY PROF. J. J. MAPES.

**Fertilizers of Organic Character.**—This is a most extensive class of manures, as it not only includes farm yard manures, but also night soil, liquid manures of most kinds, and all substances composed of animal or vegetable matter.

This class of manures operates upon the soil in various ways; they not only afford valuable gaseous products by their decomposition, but also produce those mechanical conditions both of themselves and of the soil which renders it retentive of moisture; while their ultimate constituents furnish, after thorough decomposition, those earthy and saline matters, without which, vegetables cannot grow—thus all decaying matter must and will return to the soil all the materials which it originally received from its growth.

**Farm Yard Manure.**—No manure is so generally understood to be valuable as a fertilizer, as farm yard manure, and yet none is so badly managed; from the earliest time of which we have any record, it seems to have been used, but still with

little effect as compared with what is now understood of its properties and the best modes of availing of them. In early times it was used in Palestine for fuel, and even at this time the natives of the East dry the dung of the camel for the same purpose—(Ezekiel iv., 12-15, Niebuhr's voyage, i., 121.) M. P. Cato tells us in his fourth chapter, "Study to have a large dung hill; keep your compost carefully; when you carry it out, scatter it and pulverise it; carry it out in the autumn, lay it down around the roots of your olives." In the 29th chapter he says, "Divide your manure; carry half of it to the field where you sow your provender; and if there are olive trees, put some dung to their roots." In chapter 37, he advises the use of pigeon's dung for gardens, meadows and corn land, as well as *amurea*, which is the dregs of oil: and recommends the farmer to preserve carefully the dung of all descriptions of animals. These directions were given 150 years before Christ. Virgil recommends ashes, pumice stone and shells. Varro is still more particular, and recommends the dung of birds. Columella advises the cultivator not to carry out more dung than the laborers can cover with the soil the same day, as the exposure to the sun does it considerable injury; and he enumerates as well-known fertilizers, night soil, the excrements of sheep and birds, urine, (especially for apple trees and vines,) dregs of oil, excrements of cattle, the ass, the goat, of pigs; ashes, chopped stalks of lupine, (or hop,) leaves of trees, brambles, &c., and mud from sewers or ditches.

Pliny, Strabo, and other writers, tell us that the early Britons knew little of the use of manures until instructed by

their invaders, the Romans; and even after, the husbandman was looked upon with such contempt that but little progress was made, from want of education among the operatives. The monks, after the introduction of Christianity, did much to advance agricultural knowledge, and by more judicious use of manures they excelled in gardening. In 1570, Conradus Herbactius, a learned German, published his four books of Husbandry, which were translated by Googe; he mentions the several descriptions of manure employed in his time. His book is a strange mixture of good sense and superstition. He speaks of the dung of poultry and pigeons with much approbation, but reprobates the use of that of geese and ducks. Human feces, he says, when mixed with rubbish, is good; but is too hot by itself. Urine he commends highly for apple trees and vines. Of the dung of animals, he mentions that of the ass as the first in order for fertilizing effects; then that of sheep, oxen, horses, and lastly swine, "very hurtful to corn, but used in some places for gardens."—Green manure was used in his days—"Where they have no store of cattle, they used to mend their ground with straw, fern, and the stocks of lupines and the branches, laid together in some ditch; hereunto you may cast ashes, the filth of sinks and privies," &c. And again he says, "The weeds growing about willow trees and fern, &c., you may gather and lay under your sheep. He speaks of a practice of placing turfs and heath elods in heaps, with dung, much in the same way as Lord Meadowbanks has advised with peat. He also advises the placing of the same turf parings in sheep folds.—"This is also to be noted," says our author, "that the dung that hath lyen a



yeere is best for corne, for it is both of sufficient strength and breadth less of weeds, but upon meadow and pasture you must laye the newest, because it brings most grasse in Febuarie, the moon increasing, for that is the best time to cause increase of grasse." When, however, the manure is applied for corn lands, "looke that the winde be westerly, and the moon in the wane."—*Manures*, by C. W. Johnson.

The errors and superstitions of this author are too evident to need comment. It is, however, a curious fact, that the same wasteful uses of manures as were practised in the days of Columella, still continues in many parts of our own country.

The ultimate constituents of barn-yard manure consist in the fæces and urine of animals, and such vegetable substances, added in the form of litter, as the cleaning of stables, &c., may furnish. We shall be much assisted in the examination of this kind of manure by a close enquiry into its chemical constituents.

We beg our readers not to suppose that we approve of the making of manure in barn or farm-yards; but as we know that manure is, and probably will continue to be so made, notwithstanding the waste arising from its more volatile and liquid portion under this system of treatment, we are compelled to speak of it as we find it.

M. Sassure informs us that 1000 parts of dry wheat straw, after being burned, yielded 48 parts of ashes; and of barley straw but 42 parts. The proportion dissipated by the fire would be principally carbon, (charcoal,) carburetted hydrogen gas, and water; 100 parts of the ashes of wheat straw were composed of various soluble salts, principally—

Carb'nate and sulphate of potash....	22½ parts.
Phos. of lime (earthy salt of bones)...	6 1-5 "
Chalk. (carbonate of lime).....	1 "
Silicia, (flint,).....	61½ "
Metalic oxides, (principally iron,)...	1 "
Loss.....	7½ "
	100

The straw of barley contains the same ingredients, but in different proportions.

The urine of the cow, according to M'Branch, is in 100 parts.

Water.....	65 parts.
Phosphate of lime,.....	3 "
Muriate of potash, muriate magnesia,	15 "
Sulphate of potash.....	6 "
Carbonate of potash, carb. ammonia.	4 "
Urea.....	4 "
Loss.....	3 "
	100

MM. Fourcroy and Vauguelin found that 1000 parts of the brine of the horse contained—

Carbonate of lime, (chalk,).....	11 parts.
Carbonate of soda.....	9 "
Benzoate of soda.....	24 "
Muriate of potash.....	9 "
Urea.....	7 "
Water and mucilage.....	940 "
	1000

"M. Einhof found that the fæces of cattle, fed principally on turnips, to be in 100 parts evaporated to dryness, 28½ parts of solid matter; the 71½ lost by evaporation, consisted principally of water and some ammoniacal salts."

"In half a pound, or 3.840 grains, he found 45 grains of sand; and by diffusing it through water he obtained about 600 grains of a yellow fibrous substance resembling that of plants, mixed with a very considerable quantity of slimy matter."

By evaporating the fæces to dryness, and then burning it, he obtained an ash which contained, besides the sand, the following substances:—

Lime.....	12 parts.
Phosphate of lime.....	11.5 "
Magnesia.....	2 "
Iron.....	5 "
Alumina, with some manganese....	14 "
Silica.....	52 "
Muriate and sulphate of potash.....	1.2 "

The ingredients composing the fæces and urine of cattle, will of course depend in part upon the food used, but these differences are too slight to need notice for our present purposes.

Such, then are the constituents of farm yard manure, and the reader will easily perceive that many of the constituents here given, being soluble in water, are readily washed away and lost—the merridishing of the middle of the yard will not save them, as they will continually filter into the earth, and thus be in part lost after the immediate surface becomes surcharged with the portion it is capable of absorbing. In addition to the constituents above named, all the ammoniacal salts, and part of carbon, may be lost in the open farm-yard by evaporation, and this loss is increased by the fibrous character of the litter; for every picce of straw or hay not only has the power of absorbing all substances held in solution, but from their extent of surface, accelerate evaporation with an increased ratio. We have already shown, in a former number, that manures have the power of extracting moisture from the at-

mosphere, and thus new means are furnished for continued and increased evaporation; add to this the changes of surface continually going on from the treading of cattle, and our readers will see that the loss to which the farmer subjects himself by exposing manures to the action of the sun and air, is equal to at least half if not three quarters of its value. The stupid excuse often urged that the treading of cattle assists the decomposition, is scarcely worthy of remark; for if the object be to have the dung well decomposed before being used, it can be done much more perfectly in heaps, under cover, and with less than one-tenth the loss, and in less time than when exposed in the open yard. Those who will feed in open yards, should remove the manure to a shed every morning, and then sprinkle the surface of the ground with plaster of Paris or charcoal dust, either of which will receive and retain the ammoniacal gases, which would otherwise be lost, and its removal the next morning to the manure shed, will add it to the mass for its general improvement.

When the farmer has a supply of peat, turf, marsh muck, ditch scrapings, pond mud, head lands, or any other substances which is not sufficiently strong in active animal or vegetable matter to ferment of itself, he should continually add it to his manure heaps, making the admixture as intimate as practicable—such admixtures will not prevent the manures from fermenting, but, on the contrary, by dividing them, will prevent fire fanging, and at the same time, from their carbonaceous character, will take up and save all the valuable gases liberated during fermentation.

If the object of the farmer be to get his manure very short, (well decomposed,) before using on the land, he may add all his weeds to the manure heap, as the heat produced by fermentation, destroy the seeds, and a single bushel of salt to a cord will prevent the breeding of grubs, slugs, &c. If the manure is to be used long in the fall, and suffered to finish its decomposition in the ground, then, during its partial fermentation it should have a large portion of salt in the heap to prevent the germination of weeds and breeding of insects.

When manures are to be used on salted lands, however, this precaution is not necessary. When large quantities of manures are required, and the operator has sufficient muck, pond mud, &c., he may increase his quantity to any amount



by decomposing these inert substances with the chloride of lime and carbonate of soda mixture, (salt and lime) described in a former number, before mixing them with the farm-yard manure. We have decomposed 92 cords of salt meadow muck with 400 bushels of the salt and lime mixture, and then mixed through it eight cords of farm-yard manure. The mixture fermented, and after fermentation we had as a result, 100 cords of short pulverulent manure, equal as its results proved, to a similar quantity of pure stable manure.

To ensure success in fermenting composts, the mass must be kept moist, and if the waste or spent ley of soap boilers, soap suds, water from hog pens, or some other fluid rich in fertilizing materials cannot be had, use water, and by sinking a cask into the ground at the lower side of a manure heap, the enriched wash may occasionally be returned to the top of the heap for remoistening it. The cask should receive the waste water of the house, soap suds, dish water, urine, &c. A compost heap formed as we have named, and so kept moist, will be thoroughly decomposed in sixty days or less.

But for the information of those who do not or will not benefit from the experience of others, in making composts, we will, for the present, confine ourselves to the management of manures as they usually exist.

Much difference of opinion has existed as to whether manures should be used *fresh*, or in a putrid state; some insisting upon its use fresh from the barn-yard, and others insisting with equal pertinacity on its being thoroughly rotted before being used.

We shall discuss the merits of this question in our next number.—*Working Farmer.*

(To be continued.)

#### Mad Itch.

This is a disease which occurred some years ago in Indiana, and was described as epidemic.

An affection like this was noticed by many persons in Albemarle at Mr. Benj. Wood's, October, 1849. Every cow that had the disease, ran in the lot where the hogs were fed on corn upon the stalk, cut green from the field. The symptoms were, rubbing the face and mouth against trees, or any rough object, till the nose bled, and the surface was raw. Throat swelled between jawbones and *cud* was lost. Made efforts to swallow now and then—refused to eat and drink and died

in two or three days from attack, in great agony, running about just before death as if mad.

*Post Mortem.*—Nothing wrong as far as examined, but the *many-fold* or *many-folds* (the third stomach). This was stuffed full of very dry matter, manifestly the fragments of cornstalks, chewed quite fine, but apparently incapable of undergoing the preparations for entering the many-fold.

It was said that the cows ate the balls of cornstalk material which the hogs had chewed and spit out—attracted, perhaps, by the salting which the hogs' saliva imparted.

Mr. B. Ficklin, of Albermarle, also lost several cows, under exactly the same circumstances, some years ago.

Mr. Fretwell, of Albermarle, lost all the cows (1848) that ran with hogs fed to "stalk and all," except a *breachy* cow which would not stay in the lot.

Mr. Hugh Minor lost one (1849) which was feeding in the same way, and which a neighbor told him would die if not removed. Mr. M. purposely left it there, and in a few days it died in precisely the same way described above, and the many-fold was found stuffed with the chewed stalks.

In Loudoun county, 1850, a similar disease was very fatal on some farms, where there was no feeding on stalks. It was alleged to be epidemic, and depending, like all epidemics, upon a specific miasm.

#### Dog Distemper.

The best remedy is the simplest. The distemper in the dog is an inflammation of the lungs and the membranes which surround them. It is something akin to consumption in the human system. The stomach of the animal, in distemper, is always oppressed with a quantity of mucus, which keeps the lungs, membranes, &c., in constant irritation. Hence the severe cough which accompanies the disease—the cause removed, of course the effect ceases, and the patient recovers. Take a handfull of fine table salt, hold open the dog's mouth, pour it down his throat, and hold his jaws together until the salt is dissolved and swallowed. In about a minute he will vomit, and throw up great quantities of mucus, and in many cases will throw up a little bladder about the size of a pigeon's egg, which he should by no means be allowed to swallow again. The salt makes the dog very sick, but lasts but a very few minutes, and it is not in any way dangerous;

this process should be repeated every other day for a week, diminishing the dose at each time. This never injures the constitution of the animal, as sulphur most certainly will, if he is exposed to wet weather. Salt is the remedy which I always use with my pointers, and it never fails.—*American Agriculturist.*

#### Management of Milch Cows.

MESSRS. EDITORS:—I feel myself highly flattered by the notice you have taken of my former letter, and the request that you made of me in reference to the breeding and management of cattle. I had no idea that my cows had been heard of so far from home, though they have been spoken of, and I ridiculed some little, in this vicinity. But to the subject. So far as breeding is concerned, I have paid no attention to it, except to have the cows to calve at such times as we are best provided with pasture and food. Not having the means myself of importing, and thus improving my stock, I have long wished that I lived near such a man as Mr. Peters, of Atlanta, that I might profit by his enterprise.

My management is simple, and should be common with the lovers of milk and butter. In the first place get the cow fat before she calves. As soon as she calves, (or a day or two before) milk her clear, and make such applications to the bag as will soften it and remove the milk-fever (greasy water or pot-liquor is good). At the same time let her food be such as will increase the flow of milk. Slops, pumpkins, potatoes, beets, carrots, &c., also, green rye, green oats, crop-grass, pea-vines or collards, will increase the quantity of milk. This should be attended to while the calf is very young. The quality may be improved by more substantial food, such as meal, or chopped grain, with a little dry food in snapper, and green lots or esculent roots in winter, with slops—for all dry or all green food is not so good as a mixture.

The cow should be housed during bad weather. I think it injures a cow as much to be exposed one day and night, as it does a horse or a mule a week. Those who have noticed, observe that cows continue to improve during the summer and fall or while the pastures are good, but during the winter they lose all the improvement if left to live on dry food alone, and every spring we have to start from nothing again. Whereas, by having green lots for the cow to feed on, only one-hour each day, with a little meal and some roots as above named, we can keep



her up through the winter, and then commence the improvement in the spring where we left off in the fall, and thus increase the milk every year. It matters not how much milk a cow gives at five years old; I risk the opinion that she will give double as much at ten years old, if the improvement is continued.—For, once the cow is really fat, it is an easy matter to keep her so if we are not over stocked. For illustration: I once heard of a man who got a farm and hands by marriage, he walked out where the men were hoeing and thinning corn; he was delighted with his prospects from the great number of stalks in each hill; a boy caught and at one jerk pulled up seven stalks, leaving two in the hill; the enraged master raised his Cain, and jumped at the boy, exclaiming: "boy! boy! you'll ruin us, ruin us! we'll have to beg our bread—there was nine fine corns in that hill and you have pulled up seven of them." This is precisely the case with two many farmers, they have nine cows where they should have but two.

I had rather have but one cow on full pasturage and feed, than six on the same pasturage and feed. So, also, I had rather have one stalk in a hill than nine, or even two. Every one should keep as many cows as his means will afford, and no more.

On gathering my crops, the milch cows are the first stock let into the field, and I get the benefit in two or three days, whereas, if the hogs have the preference it is two or three years before the benefits come on the table.

In conclusion, let me say to the lovers of milk and butter, take an agricultural paper; read and study nature; give your cows nature's food, and good shelter; milk her regularly, and be sure to milk her clean, especially while the calf is young; never suffer the milch cows to run with other cattle; by this means they will give milk for years—and then, too, you may arrange to have them commence giving milk at such times as you will be best supplied with pasture.

Excuse this digression, and allow me here to state that I had a cow (which I lost by accident) that I gave eight dollars for, and frequently refused fifty. She was the finest cow I ever saw. I had a friend here last week from Columbus, who saw a cow that I have with her first calf; he said he would insure me to get a hundred dollars for, her if I continued to improve her and would drive her to Columbus with her next calf. So you

see that I have been greatly benefitted by "book farming," or, rather, by reading agricultural papers.

If you consider these rude statements worthy of a place in your valuable paper, they are at your service.

Yours respectfully,  
Oak Bowery, Ala., July, 1852.

J. P.

#### Sub-Soil Plowing.

From the commencement of this Journal, we have continued to recommend the use of the sub-soil plow, and with but one exception have found it to prove profitable. The exception was with the soil of H. W. S. Cleveland of Burlington, New Jersey. He had tried the sub-soil plow, and reported to us that the crops on the portions sub-soiled, were in some cases inferior to some portions that were surface-plowed only. Knowing Mr. Cleaveland to be a careful experimenter, and feeling this instance as the only exception well authenticated, we applied to him for a sample of his sub-soil, with the view of ascertaining, if practicable, the cause of this peculiarity, and we now give its analysis by Mr. W. H. Bradley—

Organic matter	-	-	none.
Silica	-	-	88.82
Alumina	-	-	5.51
Iron	-	-	3.35
Manganese	-	-	0.50
Lime	-	-	trace.
Magnesia	-	-	none.
Potash	-	-	"
Soda	-	-	trace.
Chlorine	-	-	none.
Phosphoric acid	-	-	"
Carbonic acid	-	-	.50
Sulphuric acid	-	-	1.20
Loss and water	-	-	.12
			100.00

With the above analysis before us, it is not difficult to judge why Mr. Cleaveland's sub-soil should interfere with the growth of plants, after being disturbed so as to permit roots to enter its poisonous mass. Beyond the silica and alumina, the carbonic acid, and the loss of water, we find none of the ingredients necessary to sustain plants. We have three per cent. and thirty hundredths of sulphuric acid, doubtless in the form of common copperas, (sulphate of iron,) a salt not at all favorable to vegetable growth. The lime, magnesia, potash, soda, chlorine, and phosphoric acid, usually found in minute quantities in sub-soils, are here all absent, and in their place an undue amount of the most pernicious salt which can pervade a soil; but even with this soil, which has a curious exception to the general rule, chemistry may be

brought to its aid, so as at least to correct its poisonous properties. The plowing under of lime in the soil, and the disturbance of the sub-soil, would correct it in a single season. The lime would decompose the copperas, and the sulphuric acid of the copperas would form, with the lime, *sulphate of lime*, (plaster of Paris,) setting free the iron, which, when disconnected with the sulphuric acid, can do no harm in the soil. After such treatment, Mr. Cleaveland could gradually deepen his soil by increased depths of surface-plowing, and would find it to his advantage to so treat this particular spot. We are glad to learn that this poor sub-soil occupies but a small portion of his ground, and that the surface-soil above it is of an admirable quality, and of a fair depth. It has doubtless at some time received portions of lime, which has corrected the difficulty in the surface-soil, now noticeable in the under-soil, and the trace of lime noted in the above analysis, probably found its way to the sub-soil from the surface-soil. We are glad to have arrived at the facts in relation to this exception, for it has deterred many from the use of the sub-soil plow, when they might have benefitted largely by its application. We hope Mr. Cleaveland will be induced to experiment fairly upon this soil.

J. J. MAPES.

We extract the above from the Journal of Agriculture, to show but a solitary instance of failure or injury from sub-soiling, out of the many hundred trials that have been made by the advice of Prof. MAPES. We have recommended the sub-soiling of land, based on our own experience, from the commencement of our paper, and have induced many to experiment in it, and not in one instance do we recollect a report unfavorable to the practice; and for a very small per cent., we will insure against all losses sustained by such as may be desirous of making the experiment.—Eds. F. & P.

THE New York Times announces what it says has thus far proved an infallible cure for cholera, thus:

"Sea captains who sail out of Liverpool now-a-days, assert that they care no more for Asiatic cholera than for ordinary colic or sickness of the stomach.—They have a remedy which they pronounce infallible, and so accessible and simple as to relieve all apprehension of fatal results. We shall probably tell many of our readers nothing new, when we state the prescription:

One table spoonful of common salt, one tea spoonful of red pepper, in a half-pint of hot water."



THE MOON OUT-GENERATED.—A lady of our acquaintance, lately fairly out-generated the moon. In making soap, (over which the moon and the witches seem to have great power, according to some,) she was particularly unsuccessful, though her ley was strong, and every thing else apparently right. She was promptly informed by an experienced neighbor that she had undertaken the business exactly in the wrong time of the moon. A young chemist, who happened to be present, discovering that the ley effervesced strongly in acids, and was therefore not caustic enough, applied quicklime in small quantities to the obstinate and half-made soap, when in a short time all lunar influence was withdrawn, the planet struck its colors, (if it ever had any,) and a fine lot of first rate soap was produced.—*Ex.*

#### Tempering, Hardening and Softening Metals.

USED IN THE MECHANICAL ARTS.

(Continued from page 126.)

In hardening large dies, anvils, and other pieces of considerable size, by direct immersion, the rapid formation of steam at the sides of the metal prevents the free access of the water for the removal of the heat with the required expedition; in these cases, a copious stream of water from a reservoir above, is allowed to fall on the surface to be hardened.—This contrivance is frequently called a "float," and although the derivation of the name is not very clear, the practice is excellent, as it supplies an abundance of cold water; and which, as it falls directly on the centre of the anvil, is sure to render that part hard. It is, however, rather dangerous to stand near such works at the time, as when the anvil face is not perfectly welded, it sometimes in part flies off with great violence and a loud report.

Occasionally, the object is partly immersed in a tank beneath the fall of water, by means of a crane and slings; it is ultimately tempered with its own heat, and dropped in the water to become entirely cold.

Oil, or various mixtures of oil, tallow, wax, and resin, are used for many thin and elastic objects, such as needles, fish-hooks, steel pens, and springs, which require a milder degree of hardness than is given by water.

For example, steel pens are heated in large quantities, in iron trays, within a furnace, and are then hardened in an oily mixture; generally, they are likewise

tempered in oil, or a composition, the boiling point of which, is the same as the temperature suited to letting them down. This mode is particularly expeditious, as the temper cannot fall below the assigned degree. The dry heat of an oven is also used, and both the oil and oven may be made to serve for tempers harder than that given by boiling oil; but more care and observation are required for these lower temperatures.

Saws and springs are generally hardened in various compositions of oil, suet, wax, and other ingredients.

The period of letting down the works, is also commonly chosen for correcting, by means of the hammer, those distortions which so commonly occur in hardening; this is done upon the anvil, either with the thin pane of an ordinary hammer, or else with a *hack-hammer*, a tool terminating at each end in an obtuse chisel-edge, which requires continual repair on the grindstone.

The blows are given on the hollow side of the work, and at right angles to the length of the curve; they elongate the concave side, and gradually restore it to a plane surface, when the blows are distributed consistently with the positions of the erroneous parts. The *hack-hammer* unavoidably injures the surface of the work; but the blows should not be violent, as they are then also more prone to break the work, the liability to which is materially lessened when it is kept at or near the tempering heat, and the edge of the *hack-hammer* is slightly rounded.

Watchmakers' drills, of the smallest kinds, are heated in the blue part of the flame of the candle; larger drills are heated with the blow-pipe flame, applied very obliquely, and a little below the point; when very thin, they may be whisked in the air to cool them, but they are more generally thrust into the tallow of the candle, or the oil of the lamp; they are tempered either by their own heat, or by immersion in the flame below the point of the tool.

For tools between those suited to the action of the blow-pipe, and those proper for the open fire, there are many which require either the iron tube, or the bath of lead or charcoal; but the greater number of works are hardened in the ordinary smith's fire, without such defences.

Tools of moderate size, such as the majority of turning tools, carpenters' chisels and gouges, and so forth, are generally heated in the open fire: they require

to be continually drawn backwards and forwards through the fire, to equalize the temperature applied: they are plunged vertically into the water, and then moved about sideways to expose them to the cooler portions of the fluid. If needful, they are only dipped to a certain depth, the remainder being left soft.

Some persons use a shallow vessel, filled only to the height of the portion to be hardened, and plunge the tools to the bottom; but this strict line of demarcation is sometimes dangerous, as the tools are apt to become cracked at the part, and therefore a small verticle movement is also given, that the transition from the hard to the soft part may occupy more length.

Razors and pen knives are too frequently hardened without the removal of the scale arising from the forging; *this practice, which is not done with the best works, cannot be too much deprecated.* The blades are heated in a coke or charcoal fire, and dipped into the water obliquely. In tempering razors, they are laid on their backs upon a clear fire, about half-a-dozen together, and they are removed one at a time, when the edges, which are as yet thick, come down to a pale straw color; should the backs accidentally get heated beyond the straw-color, the blades are cooled in water, but not otherwise. Pen knife blades are tempered, a dozen or two at a time, on a plate of iron or copper, about twelve inches long, three or four wide, and about a quarter of an inch thick; the blades are arranged close together on their backs, and lean at an angle against each other. As they come down to the temper, they are picked out with small pliers, and thrown into water, if necessary; other blades are then thrust forward from the cooler parts of the plate to take their place.

Hatchets, adzes, cold chisels, and numbers of similar tools, in which the total bulk is considerable, compared with the part to be hardened, are only partially dipped; they are afterwards let down by the heat of the remainder of the tool, and when the color indicative of the temper is attained, they are entirely quenched. With the view of removing the loose scales, or the oxidation acquired in the fire, some workmen rub the objects hastily in dry salt before plunging them in the water, in order to give them a cleaner and whiter face.

(To be Continued.)

The sleeping fox catches no poultry.



## Diversity Your Products.

MESSES. EDITORS:—It always appeared surprising to me that the planters of the South should persist in the cultivation of large crops of cotton, to the manifest injury of their lands, and lessening of the amount of money received for their crops. That the lands of the South are deteriorating, must be evident to the most superficial observer.

How is this evil to be remedied? It must be plain to every one that to plant less cotton and more of everything else, is the only way; but will the planters do it? It is so obviously their interest; and that they are intelligent, I think a doubt cannot remain on the subject.—The only difficulty it seems to me is to obtain concert of action. The large space over which cotton is planted renders it difficult to get the planters together to consult upon what is best for them to do; but at the next meeting of the Cotton Convention, a system of sub-societies, or sub-committees in every county in the cotton states, might be adopted, that would effectually accomplish the purpose. If half or two-thirds of the present breadth of land was put in cotton, the crop would yield MORE MONEY than the whole breadth. Then the remaining portion might be profitably cultivated in sweet potatoes, turnips, and in small grain, with an additional quantity of corn. What additional quantities of hogs, sheep, cattle and mules might be raised, and the land enriched more and more every year. If this system was adopted, the South would become the most beautiful, the richest, the most abundant, the most independent country in the world. Add to this, every county might have a Cotton Factory, to spin yarns, and export them to the north of Europe. The spinners in Lancaster Co., England, are wealthier, and subjected to fewer vicissitudes than any of the other cotton manufactures in the country. I say then to my fellow planters, begin to manufacture, even with one hundred spindles begin. I say again begin—you can find labor in abundance as cheap as anywhere else, and all the materials and appliances in the greatest abundance. I say again, begin, nay, I beseech you to begin.

To descend to a few particulars: suppose a planter to lessen his cotton crop, and plant one hundred acres of sweet potatoes, one hundred acres of red top turnip, rye, oats, and wheat, in such quantities as he may deem sufficient. Sup-

pose he puts one hundred sheep in the fall on his turnips, dividing off the field in small spaces at a time, allow the sheep to feed, trample and enrich the field during the whole winter at proper intervals, would not that field produce nearly double the quantity of cotton or corn the next year that it would do without this preparation? And the field of sweet potatoes treated in the same way with one hundred hogs, would it not produce a great improvement? And then the rye for your Devon cows! what yellow butter, what abundance and improvement would follow, and still have MORE MONEY for your cotton, than you possibly can obtain at present.

Hear me, my fellow planters, for I tell you the truth—I wish this might be published in every paper of the South, and the cry enter every ear. RUSTICUS.  
—Southern Cultivator.

## Breeding Stock.

## ON AN INFLUENCE AFFECTING THE PURITY OF BLOOD IN STOCK.

The breeding and rearing of stock, especially animals of high and pure blood, is daily attracting an increasing attention from the scientific and enlightened agriculturist: and, when the farmer succeeds in obtaining animals possessing the qualities sought for, there is no business that *pays* more generously in dollars and cents than this; but so many failures are met with, and so many are disappointed in the progeny of animals, of even the purest and most renowned pedigree, that even among the enlightened, it is not seldom that we hear the advantages of *blood* questioned, if not denied; and it is more than intimated that the reason why animals possessing superior qualities owe their excellence mainly to the care that has been bestowed upon them in regard to their feed, &c. In regard to other departments of agriculture, similar discrepancies of opinion do not occur; and it would seem of importance to determine *why* this difference of opinion in this regard.

All are accustomed to rely upon *experience*, and it must be allowed that in this matter, many who have been to considerable trouble and expense in their endeavor to improve their stock of horses, cows, or sheep, by breeding from animals of the improved breeds, have *experienced* a grievous disappointment, in not finding the young to resemble the sire or the dam, as the case may be, as closely as they had hoped; and without being able to account for this fact, in accor-

dance with any laws that are known to them, and only knowing that *they* have failed in the expected improvement in their animals, they have naturally come to deny, or at least to doubt, what others have told them. This has been one, and perhaps the main reason why so little attention has been paid by the majority of farmers to the introduction of imported and other improved races of animals.

But the English agriculturists seem to understand the causes of these failures, and of course how to avoid them; and it would be well if this information were more generally disseminated in this country.

The reason is this: *The mother's system is influenced and changed by the young she carries in her womb; and if the male parent be of a different breed, her blood is contaminated, and she rendered similar to a mongrel for the remainder of her life.*

The assertion may startle many, who have given the subject no thought; but it is believed that no physiological fact is better established, or more susceptible of proof, than this; and as proof, I shall cite a few instances that have been noticed by Dr. A. Harvey, physician to the Aberdeen Royal Infirmary. He speaks of a young chestnut mare, that belonged to the Earl of Moreton, seven-eighths Arabian, which was covered in 1815 by a quagga, which is a species of wild ass from Africa, and marked somewhat after the manner of the zebra. The mare was covered but once by the quagga, and after a pregnancy of eleven months and four days, gave birth to a hybrid which had distinct marks of the quagga, in the shape of its head black bars on the legs, shoulders, &c. In 1817, '18, and '21, the same mare, which had in the meantime passed into the hands of Sir Gore Ouseley, was covered by a very fine black Arabian horse, and produced, successively, three foals, all of which bore unequivocal marks of the quagga.

Another case similar to the above is mentioned. A mare belonging to Sir Gore Ouseley was covered by a zebra, and gave birth to a striped hybrid. The next year this mare was covered by a thorough bred horse, and the next succeeding year by another horse. In this instance, also, both the foals were striped, and in other regards partook of the characteristics of the zebra. It is a matter of common observation, that when a mare has borne a *mule*, she is never after fit to breed colts, as they will have large heads, and otherwise resemble mules,



In the above-mentioned instances, the mares were covered by animals, in the first instance, of a different species from themselves; but others are recorded, where they bred only from horses, but by horses of different breeds on separate occasions; and yet the offspring partook of the characteristics of the horse by which the first impregnation was effected.

Mr. McGillvray, in an article published in the Aberdeen Journal, speaks of several colts, in the royal stud at Hampton Court, that were sired by the horse *Actæon*, that did not resemble *Actæon*, the paternal parent of the foal, but did bear a near resemblance to the horse *Colonel*, from whom the mares had brought colts the year previous to their being covered by *Actæon*; again, of a colt, the property of the Earl of Suffolk, which was got by the horse *Laurel*, that it was intimated by the jockeys at Newmarket that he must have been got by the horse *Camel*. This resemblance was, however, satisfactorily accounted for by the fact that the mare had been previously impregnated by *Camel*.

Many instances of a similar character are recorded in regard to dogs; in fact, the breeders of dogs all seem well aware that, if the bitch has been impregnated by a mongrel dog, that even if the father of her next litter is of pure blood, the puppies will be liable to be mongrels. Similar instances have also been observed in regard to swine, and the breeders of cattle have recorded similar facts. Mr. McGillvray mentions several instances, and among them the following: "A pure Aberdeenshire heifer was served with a pure Teeswater bull, to whom she had a first-cross calf. The following season the cow was served to a pure Aberdeenshire bull; the produce was a cross-calf, which at two years old had very long horns, the parents both hornless.—A pure Aberdeenshire cow was served in 1815, with a cross-bull; i. e., an animal produced between a first-cross cow and a pure Teeswater bull. To this bull she had a cross-calf. Next season she was served with a pure Aberneenshire bull; the calf was quite a cross in shape and color."

After citing other examples with a similar result, Mr McGillvray says, "Many more instances might be cited, did time permit. Among cattle and horses, it is of every day occurrence."

Dr. Harvey also records many cases with like results as having occurred in

the human family; but it is not thought best to include them in this paper. This mode of impairing the purity of blood in animals, has been styled *crossing the system* of the mother; and it is supposed that the reason why so many inferior animals are to be met with, the progeny of parents of pure lineage, is almost wholly owing to the blood of the mother having been previously contaminated by the cross-breed young she has carried.

Of the *modus operandi* of this contamination, there is no explanation given which is generally satisfactory; but it seems probable to the writer of this, that, inasmuch as the same blood must circulate through the veins of both mother and offspring, that the system of the dam becomes thus modified and rendered in a greater or less degree similar to her mongrel young.

It is hoped that the reader will excuse the length of this article, on account of the importance of the subject; and also because of the novelty of the facts—this being the second instance, so far as has come to the knowledge of the writer, that it has been treated of by the agricultural journals of this country, an article from the same pen having been published last year in the *American Agriculturist*. C. H. CLEVELAND, M. D.

—*Albany Cultivator*.

DEATH OF A MAN FROM GLANDERS.—Mr. J. P. Burns, a grocer in Baltimore, died a horrid death in that city, a few days ago, in consequence of poison communicated to his system from a horse afflicted with glanders. During the administration of medicine, Mr. B. thrust into the animal's mouth, his hand, a finger of which, had been previously cut, and the flesh laid open. Through this wound the virus was absorbed, and mortification supervened. A surgeon was called upon to amputate the diseased member. Perceiving, however, that the poison had penetrated to every portion of the unfortunate man's system, he declined performing the operation, and stated that no earthly skill could save his life. After lingering in great agony, death closed the scene. The corpse presented a hideous and blackened appearance.—*Herald of Reform*.

CALLS ON HORSES.—A writer in the Rural New Yorker, with an experience of twenty years, recommends the use of a mixture of whiskey and alum, (as much alum as the whiskey will dissolve,) as a preventive and remedy for galls on

horses. Of the value of this remedy, we can add our own testimony, from actual observation. We have used it upon a tender hided horse of ours, for the past three years, time and again, and have found it effectual. When the horse is marked, the galled part should be cleansed with cold water at evening, (especially in warm weather,) before using the whiskey and alum.

"I resorted to this remedy, carrying it with me when I journeyed, and have continued its use with undiminished approval, for more than twenty years. I apply no other remedy. When a horse has been put up for the winter, and has not been used, his breast and back will become tender. A single hour's use of the saddle or collar, in a hot day, will then scald the breast so as to produce serious injury. My uniform practice has, therefore, been, for a week before beginning the use of the harness, to harden the breast and back by bathing them regularly two or three times a day. No injury has then resulted from the application of the collar. And when a bad gall has occurred, a frequent and persevering use of this remedy has secured the constant use of the animal, and healed the wound while in continued service.—*Wisconsin Farmer*.

FOUNDER.—Bleed from the neck immediately, till he is almost ready to faint, give him one pound of salts, one-table spoonful of saltpetre, lead him into a pool of water belly deep, and tie up his head so that he cannot drink, and he will be well in a few hours.—*Southern Cultivator*.

#### Improvement in Agriculture.

"He who by the plow would thrive,  
Himself must either hold or drive."

Notwithstanding the truth of the above adage is admitted by every one, we think it should be taken "cum grano salis."

A great deal depends upon the sort of plow—its *modus operandi*, as well as the *modus operandi* of the holder, or driver. It is a too common opinion at the south, that one plow is about as good as another—that all that is necessary, is, to "stir the ye'th, break to smash the roots of the corn, and kill grass." There are no two blacksmiths who work by the same rule, or, indeed, by any rule at all. It is regular systematic guess work all the time.—There is no department of agriculture so much neglected amongst us, and none we are sure of more importance. The plows, harrows, and cultivators made north, are not adapted to our section, and



if they were, it would be folly to introduce them unless we had mechanics amongst us prepared to repair, make, and improve them. We have tried several turning plows with which we were much pleased, but we have never been able to have a *wrought* point put on one yet, that would do half work. To send to Yankee-dom whenever they broke, was rather more trouble than we cared to take. Again, it is ten to one if you get the implements you order. During the past winter we ordered some subsoil plows of an improved pattern, and, after submitting to unusual delay, were supplied with an article altogether different from the one ordered, and requiring double the team which the advertisement asserted necessary to do good work. This is not the first time we have paid for the same whistle. We once heard a distinguished planter remark "that a negro, a mule, and a shovel plow always went together." It seems to be the general opinion, but it is high time to think of changing it. We want a little more *theoretical* sense among our practical men who "hold or drive," "we want them to think a little—to doubt for a moment, whether the old shovel is altogether the very best implement in the world, and put their wits to work to make some improvement. We want a little more genius in our blacksmith shops—manual dexterity not only, but mental dexterity. There is something more than hard licks and bellows-blowing necessary to make a plow do good work. The blacksmith who can give the right turn and finish to an implement, has as much cause for exultation over his skill, as the shipwright has over an improved model of a steamer—and he may prove as great a blessing to society. It is this very matter which gives the northern mechanic his superiority. He thinks, he reflects upon what he has done and tries to fashion something new—some improvement upon the past. This is intelligence—it is capital too,—for every new idea only serves to beget another, and to elevate and improve the man. He ceases to be a mere drudge, a piece of machinery which is used merely to cast things always in one shape, and becomes a useful, thinking member of society.

Dr. BRIDGES has done more for agriculture by working out the *idea* of his subsoil plow, than all the blacksmiths of South Carolina have ever done. It is a simple thing, every body says—why have we not had this plow before?—because

people didn't *think*, they were too *practical* to think of such fooleries as this—they would still continue to carry the pumpkin in one end of the bag and the rock in the other, and leave it to book farmers and visionary theorists to do the thinking.

We have heard the complaint often made, that mechanics at the south were not sufficiently respected. Whose fault is it? If they would strive to elevate their profession, by intelligence, skill, good conduct, and exhibition of skill to give it character, they could assume any position they please. It is all a mistake that the profession makes the man—it does not add an ounce of dignity or importance to him in the opinion of anybody whose opinion is worth a great deal.—"Poeta nascitur non fit," and so with all great men—they are born so—they cannot help becoming so—"God hath given to some men reason and understanding—to others the art of playing on the fiddle"—every man's mission is not the same, yet every man can work out the unseen thought, into something useful for his fellow, if he will—he must try—he must put his shoulder to the wheel—it won't do to pray to Hercules. Dr. Franklin was a poor mechanic—could circumstances keep him so? No. The genius was in him and difficulties only served to make him the greater man.—Judge Douglass one of the late prominent candidates for President, was a cabinet maker—and a poor enough fellow, with all, but difficulties could not check his progress. There are no primogenitures here, no titles to nobility—save the nobility of Hunkeyism—every man if he will, can work out his mission. Troubles, checks and disasters, may be found in his path, but "they are but the protractive trials in Great Jove to find persistive constancy in man." We were drawn into the foregoing by a notice of Mr. Carter's invention, for planting seed, in the back Planter. Mr. Carter deserves credit—let him not stop here—there are a thousand other things wanted amongst us. One hundred thousand improved plows, and as many subsoil plows are needed in South Carolina. Have we no genius amongst us?—must we always hang on to a bull tongue, a twister, or an old shovel, or go to the north for everything?

"R" has given us a very sensible article on cotton. It is all humbug to talk of the competition of flax-cotton, or of India, Brazil, &c.—the area of cotton culture is fixed—our northern friends have stretched a cordon around it, if climate

has not. Consumption will follow so rapidly upon production, that we need fear nothing—there are ten thousand uses to which it can be applied yet—cotton blankets, cotton bagging, cotton rope, cotton mattresses, cotton hats, and a thousand other cotton things can be manufactured. Instead of risking our surplus in more land and negroes, let us try domestic manufactures, improvements in farming, raising more meat, and more of the necessities of life, and there is no danger.

"Half a Farmer" has given us a capital article on mules vs. horses. We heartily subscribe to his views, and assure him that facts and figures just such as he has given there is what we want.—We like to see a man make his mark upon the paper when he writes. The dam and the usage by the master, make the mule. The mule is generally turned over to the negro under the belief that a "mule will be a mule any how."

"Balking horses"—You may tell this story to the marines. Let any one try it on an old offender, and he will soon be satisfied. It is akin to the Mexican mode of curing a vicious horse, by tying a cord over the left ear, &c. Horses are like men—some of them can be overcome by kindness, can be easily led but never driven—others require a good deal of scolding and a shake of the rod now and then over their heads—others have to be beaten as Mr. Bonnycastle did Jack Easy—while a few must be killed before they are cured.

"Hilling corn,"—the hoeing may benefit it, not the hilling. We have never heard a sensible reason given for "hilling up corn"—though Mr Practical man says that it is the only way. BROOMSEDE.

Big Branch, July, 1852.

#### Free Martins.

The following communication from the President of the Worcester Agricultural Society, furnishes important facts in regard to an interesting question, which will aid in its right decision.—They are conclusive as to the assertion that *free martins* never breed. Whether they breed more seldom than other heifers, a number of experiments made with the accuracy and public spirit displayed by Mr. Lincoln, would render certain.—The popular belief is all one way, the truth may be directly opposite.

A. W. D.

"ALLAN W. DODGE, Esq.

Dear Sir:—Your attention as a member of the Board of Agriculture, and your



editorial capacity, has recently been given much to the attention of milch cows. I would state to you a fact, that may not be within your personal knowledge—that a *free martin* may be profitably reared as a breeder. Three years ago, this spring, one of my best cows was delivered of twin calves, a male and a female. The heifer was a handsome animal, and judging merely from outward appearances, promised to make a good cow, if permitted to live. She had a small head, a clean neck, a handsome form, and the whole appearance particularly feminine. I gave directions to have her reared. Hearing a few days after, of another *free martin* in a distant part of the city, which was then being fattened for the butcher, I purchased her for the purpose of raising. My kind neighbors were not slow to admonish me of the folly of my procedure, reminding me of the common opinion, that *free martins were always barren*. I inquired of them what knowledge they had on the subject, and they acknowledged their entire ignorance. I told them that as regarded many traditions and of much that I had seen in print, I was an infidel—that I knew of no one who could speak on this subject from his own experience—that I was desirous of information, of which I could never have a better opportunity of obtaining, and if, after waiting a reasonable time, I should find that both of the *free martins* should prove barren, I should cause them to be broken to the yoke, and try them as working cattle. This seemed to satisfy those friends that the experiment might not prove so unprofitable as they had supposed.

The last autumn, being satisfied that my *free martin* from my own cow was likely to become a mother, and that there was no immediate prospect of the other being so; and that, if she should be, she would probably be a very indifferent milker, and also thinking it expedient to reduce my stock, which had become too large for winter keeping, I sold the last mentioned animal to be slaughtered. The *free martin* of my own rearing has now a calf two days old, by her side, and promises to make a first rate cow.

I have thus satisfied my own curiosity, been fully compensated for my experiment, and, perhaps, have furnished information which may be useful to others, and am, with much esteem, yours,

J. W. LINCOLN.

—*Jour. of Agriculture.*

Thinking and reading speeds the plow.

#### Fixed Facts in agriculture.

These may be assumed as fixed facts in agriculture:

1. All lands on which clover, or the grasses, are grown, must either have lime in them, naturally, or that mineral must be artificially supplied. It matters little whether it be supplied in the form of *stone-lime, oyster-shell lime or marl*.

2. All permanent improvement of lands must look to lime as its basis.

3. Lands which have been long in culture, will be benefitted by applications of *phosphate of lime*, and it is unimportant whether the deficiency be supplied in the form of bone-dust, guano, native phosphate of lime, composts of fish, ashes,—or in that of oyster-shell lime—or marl,—if the land needs liming, also.

4. No lands can be preserved in a high state of fertility, unless clover, and the grasses are cultivated in the course of rotation. (a)

5. Mould is indispensable in every soil, —and a healthy supply can alone be preserved through the cultivation of clover, and the grasses, the turning in of green crops, or by the application of composts rich in the elements of mould.

6. All highly concentrated animal manures, are increased in value, and their benefits prolonged, by admixture with plaster, salt or pulverized charcoal.

7. Deep plowing greatly improves the productive powers of every variety of soil, that is not wet.

8. *Sub-soiling* sound land, that is, land that is not wet, is eminently conducive to increased production.

9. All wet lands should be drained.

10. All grain crops should be harvested a week or ten days before the grain is thoroughly ripe. (b)

11. Clover, as well as the grasses, intended for hay, should be mowed when in bloom.

12. Sandy lands can be most effectually improved by clay. When such lands require liming, or marling, the lime, or marl, is most beneficially applied, when made into compost with clay. In slaking lime, salt brine is better than water.

13. The chopping, or grinding, of grain, to be fed to stock, operates as a saving of at least twenty-five per cent. (c)

14. Draining of wet lands, and marshes, adds to their value, by making them

(a) Would not a crop of peas given to the land answer as well?

(b) Not for seed.

(c) Especially if the cob is ground with the corn.—*Eds. F. & P.*

produce more and better crops—by producing them earlier,—and by improving the health of neighborhoods.

15. To manure, or lime, wet lands, is to throw manure, lime and labor away.

16. Shallow plowing, operates to impoverish the soil, while it decreases production.

17. By stabling and shedding stock through the winter, a saving of one-fourth of the food may be effected—that is, one-fourth less of the food will answer, than when such stock may be exposed to the inclemencies of the weather.

18. A bushel of plaster per acre sown, broadcast over clover, will add one hundred per cent to its produce.

19. Periodical applications of ashes, tend to keep up the integrity of the soils, by supplying most, if not all, of the inorganic substances.

20. Thorough preparation of land, is absolutely necessary to the successful and luxuriant growth of crops.

21. Abundant crops cannot be grown for a succession of years, unless care be taken to provide, and apply, an equivalent for the substances carried off the land in the products grown thereon.

22. To preserve meadows in their productiveness, it is necessary to harrow them every second autumn, apply top-dressings, and roll them.

23. All stiff clays are benefited by fall and winter plowings; but should never be plowed while wet. If, at such plowings, the furrows be materially deepened, marl, lime, or ashes should be applied.

24. Young stock should be moderately fed with grain, in winter, and receive generous supplies of long provender, it being essential to keep them in fair condition, in order that the formation of muscle, bones, &c., may be encouraged and continuously carried on.

25. Milch cows, in winter, should be kept in dry, moderately warm, but well ventilated, quarters, be regularly fed and watered three times a day, salted twice or thrice a week, have clean beds, be curried daily, and, in addition to their long provender, should receive succulent food, morning and evening. (d).

26. Full complements of tools, and implements of husbandry, are intimately connected with the success of the husbandman.

Capital is not only necessary to agricultural success, but can be as profitably used in farming, as in any other occupation.

(d) True, no doubt—but who ever saw a cow curried at the South?—*Eds. F. & P.*



28. Punctuality in engagements is as necessary to an agriculturist, as it is to a merchant.

29. Every husbandman should carefully read and digest matters connected with his business; his success being as dependent upon a full knowledge of its principles and details, as is that of the lawyer, or physician, with a knowledge of the science of law, or physic.

30. Wheat, Rye, Oats, and Barley should never follow each other in a course of rotation; there should always be an intervening hoe-crop between them.

31. Weeds should never be permitted to mature their seed on a farm, but be pulled up, or cut down, as often as they show themselves, such being the only effectual method of eradicating them.—To ensure this result, the ground should be planted in corn, and that kept clean. (c)

32. Time and labor devoted to the collection of materials to be converted into manure, are the most fruitful sources of profit in the whole range of farm economy.

33. The orchard, to be productive of good, fair fruit, requires to be fed, as much as does a field of grain. The soil of each requires that the substances abstracted by the crops shall be restored.—The soil should be kept clean and open to the ameliorating influences of the sun, the dews, the rain and the air,—the bark of the tree should be kept in a healthful condition by scraping, when necessary, and alkaline washes,—*Am. Farmer.*

(c) This would be a hard course—better turn in a crop of green weeds occasionally.

Ess. F. & P.

#### Manure for Wheat.

Mr. Way, consulting chemist of the Royal Agricultural Society of England, has analyzed about fifty specimens of different sorts of wheat, and has come to the conclusion that an average crop of wheat takes out of the land the following substances:

84 lbs. of silica,	6 lbs. of magnesia,
20 lbs. phosphoric acid,	23 lbs. of potash,
1 lb. peroxide of iron,	8 lbs. of lime,
4 lbs. sulphuric acid,	1½ lbs. of soda.

It will be seen that the most important ingredients of wheat are phosphoric acid, and the alkalies potash and soda. If those were returned to the land in sufficient quantity, the minor mineral ingredients, such as silica, lime, magnesia, iron, &c., would in the greater number of cases, be supplied by the soil. The phosphoric acid would be most conveniently returned in bone dust, which con-

tains from 50 to 60 per cent. of the phosphates. The alkalies might be supplied singly in the shape of nitrate of soda or nitrate of potash (saltpetre). Guano is valuable, inasmuch as it comprises not only a large proportion of phosphates and alkalies, but also, what is of greater importance, particularly to the young plant, a considerable portion of ammonia. The principal organic substances he found to be carbonic acid and nitrogen, both of which exist in the air; but it is from the ammonia of decaying animal and vegetable substances that plants derive their principal supply of nitrogen, ammonia being composed of nitrogen and hydrogen. When a plant is burned, the organic portions fly off into the air, whilst the ashes comprise the mineral or inorganic ingredients. Ammonia was essential to the growth of wheat, and this might be supplied to lands which abound in all the mineral ingredients, in the shape of sulphate of ammonia, which might be manufactured from the liquor obtained from the gas works of every town.—*Ex.*

#### Farming Inconsistencies.

Farmers dig their gardens two feet deep, but only plow their fields five inches. They take especial care of their nag horses, in good warm stables, but expose their farm horses and cattle to all weathers. They deny the utility of drainage in strong tenacious clays, but dare not dig a cellar in such soils, because the water would get in. They waste their liquid manures, but buy guano from Peru to repair the loss; and some practical men who are in ecstasies with the urine of the sheepfold, have been known seriously to doubt the benefit of liquid manures. But, it may be asked, where is the capital to come from for such improvements? The reply will be, where does the capital come from to make railways and docks, to build steam vessels, to erect a whole town of new squares and streets, and to carry out every other useful and profitable improvement?—*Ex.*

#### The Weeping Willow.

There is no tree, the sight of which excites more tender emotions in the heart, than the "weeping willow." It is out of place in a public walk—but looks delightful when flourishing in luxuriant beauty on the borders of some winding stream, or in some secluded spot, which has long been the asylum of solitude and tranquility. It is the emblem of sorrow and devotion, and forms a beautiful and

very appropriate ornament to a burying ground. With its drooping foliage, it appears to be looking back on the past—and sympathising with the afflicted mourners. It reminds one of things which were—and hushes all the angry passions of the human heart.

Independent of the associations which are inseparably connected with its appearance, there is no tree in our forests which presents an aspect more graceful and lovely, or whose branches are more unbrageous. The first weeping willow was planted in England by the celebrated poet, Alexander Pope. He received from the Levant a basket of figs, and observed one of the twigs of which the basket was formed, putting out a shoot. This twig he planted in his garden. It flourished.

Grew sweet to sense, and lovely to the eye, and from this parent stock, all the willows, which are by no means uncommon in England, have sprung.—*Ex.*

**TO SWEETEN MEAT AND FISH.**—When meat fish, &c., from intense heat or long keeping, are likely to pass into a state of corruption, a simple and sure mode of keeping them sound and healthy is, by putting a few pieces of charcoal, each the size of an egg, into the pot or sauce-pan wherein the meat or fish are to be boiled. Among others, an experiment of this kind was tried upon a turbot, which appeared too far gone to be eatable. The cook, as directed, put three or four pieces of charcoal, each the size of an egg, under the strainer, in the fish kettle; after boiling the proper time, the turbot came to the table perfectly sweet and firm.—*Ex. Paper.*

#### Farm Economy.

**MR. EDITOR:**—If it is true that "the children of this world are wiser than the children of light," it is no less true, "that the God of this world hath blinded their eyes." When, Mr. Editor—when, let it be asked with all the emphasis of deep conviction and earnestness of imminent ruin; when will the cotton planters of the South open their eyes to the fact, that a crop of two and a half or three millions will produce less money than will a smaller crop. We toil and struggle through the whole calendar, from Christmas to Christmas again, devoting to the cotton crop our best energies, and thereby exhausting both; and all to swell the number of cotton bales to an amount that must in the very nature of things, depress the price to a figure far below remuneration and keep it there. Then look at the dis-



astounding consequences which are inevitable to such a course. Cattle upon the lift, or down beyond the hope of resurrection; skeleton frames reeling to the plow they have not strength to move; corn cribs empty, and meat houses desolate. In sections visited by the severe drought last year, the little money that was realized from the little price of a little crop, has all gone to Cherokee and Tennessee for corn. The bacon is yet to be bought, either on a credit or with money borrowed at a high rate of interest; in either case involving the hapless purchaser in debt. An argument of five minutes will convince any man that all these calamities may be avoided, and their opposite blessings secured, by planting a smaller crop of cotton and a larger crop of grain. Indeed, almost every man is *already convinced* of that fact.—Why is it, then, that we all confess the wrong and still the wrong pursue? Each individual is aware that his diminished cotton crop will have no effect upon the market, and in order to get his share of the money, he must plant his full proportion of the cotton. Now, Mr. Editor, I for one, am resolved to pursue a different course, from the full conviction that it is to my individual interest to make a full provision crop, and thus, if I should not succeed so far as to have grain and pork to *sell*, I at least will endeavor to avoid the humiliating necessity of being compelled to pay away all, or nearly all, the proceeds of the cotton crop for these indispensable necessities. And until every planter is convinced by practical experience, that, let others do as they may, it is for his individual interest to do likewise: then, and not till then, will the cotton crop be restricted as to bring about that desirable state of things, viz: *more money and plenty of provisions*.

I am aware that it is maintained upon quite formidable authority, that the extent of the crop has no influence in determining the price; and a learned professor attempts to prove that to be true, by the extent of the several crops of the last ten years, and the relative prices obtained for them. But an argument based on those data is incomplete. If a large crop, or even a succession of large crops, brought a light price, the inference is inevitable that short crops, under like influences, would have brought a higher one. To maintain that short crops bring low prices, is to maintain that corn would now be worth one dollar per bushel, if every crib in the land were bursting with corn.—*Soil of the South*.

**TO MAKE CUCUMBER PICKLES.**—Soak the cucumbers three or four days in old, sour cider, or two parts water and one of vinegar; then place them in the pickle jar; heat good cider vinegar scalding hot, with an ounce of alum to a gallon of vinegar, with any kind of spices, and in such quantities as may suit the taste; pour it over the cucumbers while boiling hot; cover them tight, set them in a cool place and if the vinegar is right they will keep till June, when the old vinegar should be discarded and new substituted. Pickles made in this way are always crisp; the alum hardens the skin of the cucumbers, so that it never turns soft.—Those made in this way a year ago are in excellent condition now.—X.

#### TO CURE CORNS.

A piece of homespun a little larger than the corn, fried brown with just enough beefs' suit on the bottom of the pan to fully saturate the cloth, applied as a plaster, will cause the corn to shed off in a few days, leaving a healthy skin.—One or two plasters are generally sufficient.

To prevent corns from coming, just dispense with a little pride; it will save you much pain, and give you a free and easy step. J. J. B.

We received the above from one of our subscribers, and would recommend a trial of it by those who are troubled with corns.—*Eds. Farmer and Planter*.

**ANTIDOTE FOR STRYCHNINE.**—A writer in the *Texas Ranger* gives an account of the successful treatment of some negroes who had been poisoned with strychnine which had been prepared for wolfs' bait. Melted hogs' lard was administered to them freely after they had suffered in great agony for several hours, and immediate relief was the consequence.

This remedy is not intended for the benefit of dogs.—*Eds. F. & P.*

**TOMATO CATSUP, (OR KETCHUP.)**—Pour boiling water on tomatoes, let them stand until you can rub off the skin; then cover them with salt, let them stand twenty-four hours. Then strain them, and to two quarts, put three ounces of cloves, two ounces of pepper and two nutmegs. Boil half an hour, then add a pint of wine *Miss Beecher*.

**HAY HARVEST.**—Cut your grass when in bloom; the hay thus cut is more grateful to animals, and is infinitely less exhausting to the land.—*American Farmer*.

#### NOTES ABOUT MILK.

Cream cannot rise through a great depth of milk. If, therefore, milk is desired to retain its cream for a time, it should be put into a deep narrow dish; and if it be desired to free it most completely of cream, it should be poured into a broad flat dish, not exceeding an inch in depth. The evolution of cream is facilitated by a rise, and retarded by a depression of temperature. At the usual temperature of the dairy, 60 degrees, F., all the cream will probably rise in thirty-six hours, but at 70 degrees, it will perhaps rise in half that time; and when the milk is kept near the freezing point, the cream will rise very slowly, because it becomes solidified. In wet and cold weather the milk is less rich than in dry and warm; though not in thundery weather. The season has its effects.—The milk, in spring, is supposed to be best for drinking, and hence it would be best for calves; in summer it is suited for cheese; and in autumn—the butter keeping better than that of summer—the cows less frequently milked, give richer milk, and consequently more butter.—The morning's milk is richer than the evening's. The last drawn milk of each milking, is at all times and seasons richer than the first drawn, which is the poorest.—*Exchange paper*.

#### FARMER SNUG AND FARMER SLACK.—THE CONTRAST.

I have lately made some observations upon the difference between farmers, which, with your leave, I should like to lay before your readers. In the first place, let us examine the premises of a good farmer.—His barns and out-buildings are a perfect model of neatness.—Not a board missing on the barn, to let in the winter winds and snows; but all is warm and comfortable. His yards do not show the want of time to clear them, consequently he does not lose one quarter of his manure—the most valuable and necessary article in all improvements in agriculture. Not only is this amount saved, but the pleasure of getting around the yards and barns is greatly facilitated, and greatly to his advantage. Examine his fences, you find no rails or boards missing—all is snug and in order. His cattle and sheep are in their places, not troubling their neighbors. Ask this man to take an agricultural paper, and nine cases out of ten he will tell you that he is taking one or two already but would like to renew his subscription for another year. Ask him if he could get along



without it, and he will tell you perhaps he could, but he would not so long as he could obtain one for so trifling a sum.—This is the scientific farmer.

Now let us view the premises of farmer Slack, and mark the difference. His barns speak out—they want now and then a board, (and oftener now than then,) to keep the contents from the snows and storms of winter. His yards show the effect of easy habits—too much that is valuable going to waste. His fences denote the same want of care and attention. In some places only the traces of a fence are visible, so that with the utmost ease, his cows can go from field to field, or his neighbors' cattle partake of the herbage his own so much require, judging from their appearance. Such is the farm of neighbor Slack, as he is termed. Ask him to take an agricultural paper, and mark his answer—ninety-nine cases out of a hundred him or his prototype will tell you *no*—I want none of your *book-farming*. He is content to go on in the same routine that his father did before him.—To such I would say, of the two, give me the book-farmer, for that is the kind of farming for me. Moreover, I would ask, what makes the difference between the two farms I have represented. One takes an agricultural Journal and studies his profession, while the other does not. The contrast is drawn from facts which have lately come under my observation, and are not exaggerated.—*Exchange*.

#### Lucerne.

Messrs. Editors:—I have for some years past had growing a small patch of lucerne, for the purpose of soiling calves, and find it the more flourishing the longer it stands. It is the first green food which puts up in the latter part of the winter, and grows in the warm days very rapidly. I have tried it for greens, and can assure you that the tender sprouts are equal in every respect to mustard or turnip greens, and much milder to the taste. It is first rate and no mistake.—Try it gentlemen and you will agree with me. Now, the advantage of it is, it comes on before we have anything else: and when once planted, comes from the old root every succeeding year—getting better and better for five years—as I know from experience. I plant in drills eighteen inches or two feet apart, and once a year run a bull-tongue thro' it to loosen the soil. This is the only cultivation given it. How will it do sown broadcast as a renovator of the soil, and for pasturage? B.

REMARKS.—We fully agree with our correspondent as to the value of lucerne, and consider it by far preferable to clover, as a *soiling* crop, for this climate. It should not be depastured or trodden by cattle, but may be cut green and fed to cows that are stabled, at the rate of about 80 pounds per day. It is generally eaten with great avidity, and produces an abundance of milk. The proper time for cutting is when the flowers first show—not later, as the stems are apt to become hard and innutritious. It may be sown either in drills or broadcast, and hay made and seed collected from it in the same manner as clover. When broadcast, 15 or 20 pounds of seed, with a few oats sown early in the spring, will give a good "stand," on deeply plowed and well manured land. Our friend B. would probably find it advantageous to loosen the soil oftener than once during the season, and also to turn under, occasionally, some good manure, with a portion of lime or gypsum.—*Cultivator*.

#### The Earth we Inhabit.

Being not much crowded with original matter in our present number, we publish the following article from an old friend, though not strictly in our line. The article referred to relating to the size of the earth, was picked up by our "Jevil" to fill a small space, and he says in turn, friend S. you are wrong in your estimate of the proportion of land covered by water—we shall not pretend to decide which is right. We should have greatly preferred an article from your pen on the business of corn making on your Etowah bottoms—such would have interested our readers more than would a discussion about the size of the world or the number of its inhabitants.

Messrs. Editors:—I have seen published in your paper, the Farmer and Planter, the probable size of the earth—this world which we inhabit, which is said to be near 7616 miles in diameter, or through, and the circumference 24,880 miles round. My opinion is, the earth is something larger than your estimation, and that opinion is, that the diameter of this world is something over 8000 miles, and the circumference about 2500 miles; a globe map is a good representation of the world. This world is a round ball, but an uneven surface, and near the centre of the earth is an attractive power to which every thing of a weighty substance inclines. Go around the world, and your feet will always be towards the centre. Throw up a weight and it will fall towards the centre of the earth. The centre of the earth seems to us as being the bottom. There is nearly two thirds of the earth covered with water. The land and water both have living inhabitants. The human family is estimated at one thousand millions. Man is the most sensible animal—it is said that a common man has about four pounds of brain; and an ox

that will weigh eight hundred or a thousand pounds, has not more than one pound of brains. But man, with all his wisdom, has more vanity than any other animal known.

There are in Asia about four hundred and fifty millions of Pagans, who believe in and worship Brama and Fo. There are, mostly in Europe and America, about three hundred million of christians, of different denominations. One hundred and fifty millions of these christians are Roman Catholics. They have evidently the finest church in the world, St. Peters Church, Rome, Italy. It occupied one hundred years to build this church—it is entirely of fine Italian marble, and is the finest building known any where. There are about two hundred million Mahomdeans. They have the largest church known (the Masque of Omar), built, and stands now where Solomon's Temple stood, near Jerusalem. It was measured by Dr. Richardson, and found to be 1489 feet long, and 995 feet wide. The floors and walls are of marble, and the sakara, or inner shrine, sixty feet square, and made of the finest material, and covered with sentences from the Koran. But to return to the earth: There is precisely so much water around this world, which in part, evaporates from the earth, and again returns in the form of rain and dews. There is precisely so much air around this world, part of which expands from the earth, to such a point and no farther, and then returns again to or near the earth. The Sun, the moon, and the earth, are known as, and called planets, besides six other planets, known to us as stars. Some of these planets are said to be much larger than the earth, and, with the exception of the sun perhaps, are all inhabited with living creatures, and probably similar to the human family. But there is a space between these planets where air does not exist, and consequently man could not live to pass from one planet to another. But if there were any means of travel, I have but little doubt you would find many Yankee Americans preparing to go, and going, from this planet to some other for the purpose of trade and speculation.

Respectfully your friend, J. M. S.  
Hightower, Ga., July, 1852.

PRESERVING BUTTER.—The farmers in the parish of Undy, in the county of Aberdeen, Scotland, practice the following method for curing their butter, which gives it a superiority over that of their neighbors:

Take two quarts of the best common salt, one ounce of sugar and one of saltpetre; take one ounce of this composition for one pound of butter; work it well into the mass, and close it up for use. The butter cured with this mixture appears of a rich marrowy consistence and fine color, and never acquires a brittle hardness nor tastes salty. Mr. Anderson says: "I have ate butter cured with the above composition that has been kept for three years, and it was as sweet as at first." But it must be noted that butter thus cured requires to stand three weeks or a month before it is used. If it is sooner opened, the salts are not sufficiently blended with it, and



sometimes the coolness of the nitre will be perceived, which totally disappears afterwards.—The above is worthy the attention of every dairy woman.

#### Lucerne—An old acquaintance with a New Name,

Alfalfa, *alias*. Brazilian Clover, *alias*. Chilian Clover, *alias*. LUCERNE—for such it turns out to be, and nothing else. Well we are glad it is no worse—for there could scarcely be a better article in the list of artificial grasses.

We received last spring from the Patent Office, two papers of what was labelled, "Alfalfa, or Chilian Clover seed," which were sown some time in April; they came up remarkably well, for Patent Office seed, and the progress of the plants were of course closely observed; it was not long, however, until we began to suspect the stranger of being an old acquaintance, and our overseer, who is not much of a botanist, remarked to us, on walking through our garden, "that truck you've got planted there, looks mighty like this thing growing on the borders of the walks." We remarked that we had suspected it was the same, for the two plants were much alike when young, we would see more about it however when the plants came into bloom. They are now (July) in full bloom, and yet nothing but Lucerne, *alias*, Purple Medick Grass, (*medicago sativa*) and yet another *alias*, by the French *Grand Trefle*. On making this discovery, and seeing nothing on the subject in any of our exchanges, which we have closely watched for, we came to the conclusion that the seed sent us, had been put up at the Patent Office, and through mistake labelled wrong, and hence was disposed to say nothing about it, being satisfied that although somewhat humbugged we were not badly cheated. But on examining the article "Lucerne," in the "Farmer & Planter's Encyclopedia," recently, we find the following remarks, which satisfied us that there was no mistake in putting up and labelling the seeds.

"Lucerne is sometimes called *French Clover*—and has been introduced into the United States, as a new plant under the name of *Brazilian Clover*, called in South America, *Alfalfa*, the Spanish name for Lucerne." The author of this excellent work further says: "This is a kind of grass which, in some situations, has been cultivated with great success in the United States.—It is not, strictly speaking, a *Clover*, though in some respects similar. It is a perennial, and in favorable soils, the roots are said to live and flourish a great many years. Its advantage consists in affording a greater amount of foliage for any kind of stock than any other plant, with the same labor and expense." For the correctness of this last statement, we can fully vouch. We have cultivated lucerne, on a small scale, for many years, and are really astonished at ourselves, and others, knowing its superior qualities as we do, that we have not cultivated it much more extensively than we have. A good deal of enquiry has recently been made about lucerne—the time of planting, its culture, &c. In an-

swer, we would say to our friends, if you have the seed, or can procure them in time, you may, we think, very safely sow in September—though our practice has been to sow in April. At any rate procure the seed, and sow in drills 18 inches apart, after manuring highly, subsoiling, plowing and harrowing your land thoroughly, so as to make as fine a tilth as possible. About two pounds of seed to the acre, we presume, will be sufficient, which, if you have no drill machine, may be very regularly and expeditiously drilled out of a bottle having a small quill, through the cork, the size of the quill to correspond with the quantity of seed to be sown; cover lightly, and keep clean till the young plant gets a fair start of the weeds, when you will have not much more trouble than that of cutting and feeding.—This business will keep you busy through the summer, if you have much, even one acre, sown. Lime, ashes, and bone-dust, will be found the most valuable applications as manure, unless you can procure the mixture of Kettlewell's Fertilizer and Guano. This we have no doubt, would be a superior manure for lucerne. And it will not be long before our rail roads are completed to Anderson and Greenville, when we shall be able to procure it on such terms as will, we have no doubt, be remunerating when applied to any crops cultivated by us.

We have a piece of corn to which we applied guano and plaster of Paris, very sparingly, which is progressing beyond our most sanguine expectations. It is not *that* field of mountain corn, which has been saddled on us, and which Major Perry saw near Mr. Sloan's, that he had understood was the effect an "agricultural humbug got up about old Pendleton." We must confess, however, that we have some of *that* corn, which is so low it had to take a rest on the ground to shoot from—and one of our neighbors observed that some of it had tassels longer than the stalks. The truth is we were woefully humbugged with *that* corn, for it was said it ripened early, grew best on poor land, with many other good qualities—but the most important consideration to a man out of bread was, that of its ripening early. We were all anxious to see the new crop—hence we bit at it at two dollars and a half per bushel, like a trout at a minnow and were consequently about as badly hooked.

#### Information for Farmers.

In agriculture, as in all other employments, if we would pursue it successfully, we should understand it, or, in other words, have a thorough knowledge of its theory. That we may obtain that information, we should furnish ourselves with books of the best authors on that subject, and at least, with one periodical, devoted to agriculture, and study them attentively, and then we shall be prepared to perfect our knowledge by experience. There are at this enlightened day, strong prejudices against book-farming, as it is termed. I pity the stu-

pidity of the man who thinks if we use books, we must shut our eyes against the light that is beaming upon us from all other sources. What is book farming? It is learning by means of books, new facts, opinions, and the result of experiments, and different modes of operation, and we can use such parts of the information thus obtained as best suits our situations. If we would acquire the appellation of a good farmer, and so pursue the occupation as to make it pleasant and profitable, we must study its theory until we attain a thorough knowledge of all its various branches. We must learn the nature and properties of soils, know their wants and how to perpetuate their fertility. The study of agriculture as a science, and its pursuit as an employment, I deem admirably calculated to produce individual happiness. It leads the mind away from the turmoil and bustle of many other pursuits, and places a reliance on individual exertion and the blessings of heaven. In the labor of the fields, under the blue canopy above, when the breeze is pure and refreshing, there is that freedom from the cares and perplexities of this world, that is seldom enjoyed in any other pursuit.—*The Planter*.

#### The Crops.

Crops of corn in this district, and in adjoining districts, so far as we have seen or heard from, are looking uncommonly well, and must, without some unforeseen disaster, turn out an overwhelming crop. Cotton also looks well for the season, but if the rains continue, there is much danger of the plant running too much to wood, to be followed by rot, &c.

We have, by invitation, visited a few farms in our immediate neighborhood. The first, was that of Mr. A. F. Lewis, adjoining to, and immediately below Fort Hill, on Seneca river. Some ten or a dozen gentlemen, including ourselves, were invited to view the crop, to eat melons, and to dine with Mr. L. The latter was a strong and most persuasive inducement to the performance of the former. Knowing as we all did, what to expect when we came to the table, for if Mr. Lewis is one of our most systematic and successful farmers, he can claim no superiority in his legitimate line of business out doors, over that of his better half and most amiable and accomplished companion within, where order, system, and neatness reigns in every department. Many a housewife might learn something, by occasionally visiting Mrs. L. But comparisons are odious, or we might add more. Sufficient to say, however, that after viewing the crop, and refreshing the inner man on some of H. E. C.'s best "old particular," ample justice was done to the most excellent dinner and fine melons set before us. Mr. L. has about one hundred acres of Seneca bottom in corn, and



such corn man has rarely the pleasure of beholding. We were much pleased with the condition in which we found the crop—the mode of culture was admirable—for, although a part of the land was until recently covered with water, all was thoroughly drained by ditches, most judiciously laid out, so that there was not the least need of high ridges on which to plant, and hence none were found, the culture being almost level. The corn is drilled and well distanced, and yet the growth was so luxuriant it was with difficulty in many places that a man could be seen at a few paces across the rows. We did not see any lightning bugs, that some of the company requested us to look out for, but by following but a short distance behind at one time we *did* get lost, and only found our company by tracking their horses—which was easily done in the clean, loose, mellow soil not yet entirely covered by the pea-vine, which bids fair before fodder pulling time to obstruct all passage. We pity Mr. L.'s hands when this business comes on, but he informed us that he should not attempt pulling higher than the ear, as that much would give him ample supply, and that the article would be so abundant, that it would not pay for pulling to sell. We thought, well he might stop at the ear, unless he supplied each hand with a light ladder, to enable him to reach higher. On leaving the bottom and ascending the hill, we were induced to turn our horse and take a birds-eye view of the corn, when a young friend near us observed "if the rail-road should pass this way (the survey from Pendleton to the Stump-House Mountain passes through this bottom), and Mr. L. will leave a streak of his corn standing, there will be no necessity for embankment or trestle work—the road may be built on top of the corn." And it really looked so, viewed from our station.

Although Mr. Lewis is entitled to much credit for the management of his bottom, we are disposed to give him much more for the greatly improved condition of his up-land, on the most of which there is now an excellent crop of cotton growing. Much of this land, when Mr. L. took charge of it some few years since, was grown up in sedge, much washed, and considered worthless. All has, however, been taken into cultivation, judiciously grade ditched, and is now giving evidence of a greatly improved state of fertility.

Mr. Lewis is considered an exception, on a comparison with his neighbors, in the management of horses. He has a peculiar pride in having the best horses—the finest carriage, and—but we will not say the balance, lest Mrs. L. may not give us such another dinner when we go again. We did not see Mr. L.'s stock of cattle and hogs but are told they are superior. His houses, barns, stables and other fixtures, are comfortable and neat. His garden is good, and well stored with the fine vegetables which Mrs. L. knows so well how to prepare for the table.

We have notices of some other farms, which for the want of space, must be deferred till our next number.

Prefer a prudent and discreet, to a rich and showy wife.

#### Guano—mode of using it.

Guano should always be composted for a time with either charcoal dust, decomposed peat or muck, or black soils. Carbon, which exists in all these, has the property of taking up ammonia slowly, and of retaining it until required by the growing plants.

In dark-colored soils, such as contain much carbonaceous matter, guano will last as long as any other manure, and from its small bulk, is less expensive to handle. In clayey soils which have been ridged and disintegrated by winter's frosts, guano is a more lasting manure, unless used up by growing plants, and no manure can be valuable which defies the efforts of the crop to use it. Alumina (clay) retains ammonia, and hence in such soils the ammonia of the guano cannot be lost, if the guano is plowed under a sufficient depth. In sandy soils, guano cannot be used with profit, without being first mixed with some substance capable of retaining its ammonia.

We cannot but approve of the raising of green crops (clover) on poor soils with guano, and then plowing them in before grain crops. This treatment not only divides the inorganic constituents of the guano throughout the soil, but also adds the carbon, solidified in the clover, from the atmosphere, rendering the soil more retentive of fertilizing gases. Guano should not be placed in the soil by harrowing—if plowed under to a sufficient depth, the ammoniacal gases will pass through sufficient soil to absorb them, whereas, when near the surface, they evaporate into the atmosphere and are lost. One of our experiments with guano was thus conducted: Having run a surface furrow of twelve inches deep, the guano was sown in the bottom of the furrow, in which followed a sub-soil plow, thus mixing it with the sub-soil and repeating the same process with each furrow. Thus it will be seen that the guano averaged a depth of twelve inches or more, and was thoroughly mixed. This experiment was made four years since, and the field still continues to show the effects of the guano almost as evidently as the first crop after its application.—*Ed. Working Farmer.*

One of the softest and surest cures of diarrhœa, is rice water. Boil rice until it becomes pasty, and after you salt the water in which it was boiled, drink it freely. It will prove not only a remedy for diarrhœa, but for dysentery and other disarrangements of the bowels.

#### Laurens Rail Road.

The following pertinent remarks are taken from the *Laurensville Herald*. We think that part italicised, (by ourselves,) will ere long apply to other sections of our country, as well as to the vicinity of Laurens. How citizens can stand by and see their neighbors straining every nerve to carry out a great public enterprise, which, all must admit, will result most favorably to every class of the community; and after the work is completed, he among the very first to reap and appropriate to himself a liberal part of a crop he has not even *assisted* to sow, and yet hold up his head as a man in the community. How all this can be done, and that, too, by men able to contribute liberally, is more than *our* philosophy enables us to understand.—*Eds. F. & P.*

We are gratified to learn from the President that the cars are now running to within ten miles of this place, and that the road is progressing not so rapidly, perhaps, as its warmest friends might desire, but as much as circumstances will admit of.

In a few weeks they will reach the Five Points, and we understand that the contractor will have the depot completed in time for the reception of any goods which may be sent to that place. This depot is within 43 miles of Greenville C. H., less than 30 of Union, and 35 from Spartanburg. But even now, goods may be sent to the head of the road and they will be securely kept in boxed cars stationed for that particular purpose. It is very desirable that persons ordering goods should have them sent to the head of the road, as the depot at Martin's is too small to accommodate all which are sent to that place.

We understand, also, that the road is doing a fine business. The amount received from both the passenger and freight trains have far exceeded the expectations of its projectors, and it is reduced to almost a certainty that the company will be able to declare a remunerating dividend. But should it not declare one cent of dividends, the past season has clearly demonstrated that the District will be amply compensated, by the conveniences which it has afforded them, for its construction. In the one article of corn, alone, it is impossible to tell the amount which it has saved the District the present year. Almost every farmer in the whole country was reduced to the necessity of buying. Their horses, in consequence of the general scarcity,



ty, were poor, and barely able to perform the necessary labor required upon the farm, and if it had not been that the rail road furnished it, almost at our very doors, 25 or 50 per cent. cheaper than we could have procured it elsewhere, general suffering would have been the inevitable result. *Every one acknowledges this, and yet we are sorry to confess that some of our citizens, and some too, who were the very first to avail themselves of the advantages afforded by the road, have not subscribed one dollar towards its construction.* They have suffered their neighbors to strain every nerve, aye, will stand and see a heavy assessment imposed upon them, to build up a cheap and speedy communication with market, while they are complacently reaping the advantages. They may endeavor to console themselves with the thought that if they were in the beginning of the enterprise they would liberally subscribe. Your assistance, gentlemen, was never more needed than now. Although the company is in a condition entirely solvent, every one knows the old adage, that "money makes the mare go," and it is equally necessary to speed the motions of the iron horse to his destined goal. In an undertaking of this sort, much money is needed, and money must be had before it can progress to a speedy termination. You can therefore make amends for your neglect by placing your names upon the subscription book even at the eleventh hour. Every consideration should induce you to do so; District pride, your own interest, and a sense of justice to your neighbors and friends alike imperiously demand it. So we will say to you, as well as to delinquent subscribers, "down with your dust."—In these dull times, Capt. Barksdale, the gentlemanly and accommodating Treasurer, will not consider himself at all annoyed by the reception of additional stock.

#### Progress of Universal Law.

A writer in the American Phrenological Journal, under the above head, speculating on the probable amount of food the earth we inhabit may be made to produce for the sustenance of future generations, makes the following remarks:

"Who would have believed fifty years ago that most of the transportation of goods and passengers throughout our vast country would now be done without horses? Nor will they believe that fifty years hence our plowing will be done without horses, but is not the latter as probable as the former? Besides has not a machine actually been put in operation at the South for digging up land to any required depth;—serving every purpose of the plow, and all done by

steam! Out of this invention will grow a machine to be used on every farm, just as we now use oxen and horses, and this machine will require only fuel—coal, and wood,—neither of which will cost any land. By this means, also, the earth can be dug up to the depth of several feet. Hence a dry time will only serve to improve our crops, for their roots can then go down deeper, and deeper still, into the earth, so as never to lack for moisture, and will obtain the more heat the dryer the time, so that the greater the drouth the more vegetation will grow where the land is thus deeply tilled. Besides, as sun and air decompose stone and soil, the deeper the earth is dug up the more decomposition will go on, and accordingly the faster the land will become enriched.

It is conceded on all hands that trenching land—say two or three feet deep, adds immensely to the productiveness, even without manure; then add to this deep tillage all the fertilizing elements presupposed in former articles, and our estimate of the amount of human food falls far below what will be actually realized. We then repeat that after ages will probably see every acre raising food enough for twenty persons for one year.—

\* \* \* \* \* In the name, then, of all these concurring data, how many inhabitants will the world be able to feed, after human ingenuity shall have exhausted itself in devising ways and means to increase the earth's productiveness?—From twenty-five to fifty to every acre. From 2500 to 5000 for every farm of 100 acres! From 15,000 to 30,000, for every square mile!!—From 500,000 to 1,000,000, to every township of six miles square!!! Absolutely incredible, you exclaim. Then make your own figures, but first *study your subject.* O! earth, some day thou wilt be literally all alive with teeming humanity."

#### To the Friends and Patrons of the Farmer and Planter.

THREE numbers more will complete our third volume. Are we to publish a fourth, or not? Give us due notice, friends, that we may govern ourselves accordingly. We must have a larger list of subscribers than we have at present, or we shall be compelled to abandon the enterprise. We do not believe in the propriety of amalgamating with a political paper. This we might have done long since, and instead of the Farmer and Planter, you might have had the Farmer and Planter and Pendleton Messenger. But we have preferred a separate existence, and believe that most of you prefer the same. It is for you to determine our future course. If you say go on with the Farmer and Planter, and "back your friends," we shall do so, and endeavor to make you a better paper than we have heretofore given you, as we expect more aid in carrying on the work than we have had the present year. The present size and form of the paper will be retained, with the addition of a colored sheet as a cover, which will be devoted exclusively to advertisements. Other improvements must depend entirely upon the amount of patronage the paper may receive.

We shall be pleased to have the names of each

one of our present subscribers as leaders, with a good list attached (and surely there is not a man of you who cannot get at least one recruit) and sent up by or before the first of December. We desire no money for volume four until the first number is received. This will save us the trouble and expense of refunding, in case the number of subscribers will not justify a continuance of the paper. The amount that is yet due us for the present and past volumes will be thankfully received at any time. In conclusion, come out friends of the Farmer and Planter and let us hear from you.

#### Editors' Table.

We would call the attention of our farmers and planters to the advertisement of Mr. Kettlewell's Salts and Peruvian Guano. We feel most anxious for the completion of the rail road to Anderson in time to enable us to test on our next crop, this unsurpassed fertilizer, which, we believe, when our freights are reduced, every agriculturist may use, and the more liberally the more profitably.

A notice of the annual meeting of the Newberry Agricultural Society, held on the 28th of July, which we find in the "Sentinel," came to hand too late for our present number. We are sorry to recognise the names of so few of the members of the committees as subscribers to the Farmer and Planter. We hope to have some valuable reports from this society, however, to lay before our readers.

A BEET THAT BEATS THE BEATER.—Mr. T. J. Sloan of our village has left at our office a Beet measuring 21 inches in circumference, and weighing 11½ pounds. It seems to be a hybrid between the turnip and long red variety.

We also have a remarkable pea and bean, sent us by Mr. Clayton, of Pickens district. The pea, with the exception of its unusual length which is about 28 inches, had the appearance of a Cow pea. We observe, however, that the peas are very scattering in the pod, it containing not more than is usually found in a well filled "Crowder." The bean is uncommonly long also, with the same objection.

#### Willow Baskets.

It will be recollected that an article on the manufacture of Willow Baskets, from the pen of our esteemed correspondent "BROOMSEDGE," appeared in one of our recent numbers. We were not then aware that a manufacture of baskets from the willow was carried on in our own district. This however we have since learned, and through the polite attention of our young friends, B. F. & T. S. CRAYTON, merchants of Anderson village, have received a present from Miss MARY REEVES, the manufacturer, of a beautiful and most exquisitely formed basket, for which we tender our thanks, with our most polite bow to the fair donor. We are informed by Messrs. Crayton that they have been selling baskets for Miss Reeves for the last three years. To the amount the first year, of \$12.50 cents;



Second year, \$2.50; Third year, \$5.00; and that they have not sold more than one half the baskets made by her, nor have they had a sufficient quantity to supply the demand. In future they will probably be able to keep a constant supply on hand; and we take great pleasure in recommending our lady basket buyers, and where is the one that would not give her last dime for a basket, to apply to Messrs. C., who have shown such a laudable disposition to encourage in the young lady, a most praiseworthy spirit of enterprise and industry.

#### Agricultural Implements.

We desire to call the attention of our readers, especially such as may wish to purchase agricultural implements machinery, &c., to the advertisements of Messrs. SINCLAIR & CO., of Baltimore, and of Messrs. HENDERSON & CHRISOLM, of Covington Ga. We have ordered within the last year, plows, corn-shellers, &c. for ourselves, and neighbors, from the former, and have found them to be every thing recommended, and shall take pleasure in ordering any thing advertised by Messrs. S. & Co., our friends may desire to purchase.

We have recently received one of Messrs. HENDERSON & CHRISOLM's Cotton Gins, but have not yet put it to work—judging, however, from appearances, we have no doubt it is one of the *very best* Gins manufactured any where, either North or South. We shall say more about it when we have tried it.

We intend after the present year, having the facilities of the rail road to Anderson C. H., to keep constantly on hand a supply of the best plows, cultivators, harrows, &c., &c., with the most improved implements and machinery of every description, that may be advantageously applied to the use of the Farmers and Planters of the South. We believe we shall be able to supply our friends on as good terms at old Pendleton, as they are now obtaining the same article in northern cities—with the advantage that we shall recommend no implement that we are not satisfied, from experiments made by ourselves or neighbors, are *worthy* of such recommendation.

It is high time that we had, at least in part, laid aside the old shovel, the jack and the bull-tongue, with their innumerable and non-conformable shapes and forms—which friend "Broomsedge" has laid his hands gently on in our present number—and substitute in their places, for the most important operations on our farms, plows of better construction, and in every way better calculated to do a much more efficient work. If we ever expect to reclaim our exhausted lands, which have been run down by the scratching of the shovel and scooter. Our mode of preparation and cultivation must be conformable with a more enlightened system than has been practised by our forefathers:

"A man to ancient ways addicted,  
Of ancient follies oft convicted."

The turning plow must take the place of the shovel and bull-tongue, and the sub-soil that of the old fashioned new-ground coulter. It is too

late in the day to commence crying down deep plowing. Our first, or virgin soil, has gone down our creeks and rivers,—we have another just below which we *must* go down into—its a shorter trip than to Texas or California. But what we mean by deep plowing, is not what a great many understand it to be—*deep turning* of the land, we would advise for all land to be turned according to the depth of the soil, or what is usually termed the soil, and which will be found to be very shallow on much of our lands. The turning plow we think should never, at one operation, exceed the depth of the soil more than one inch—but in the furrow, and immediately after the turning plow, let the subsoil plow do the business of the pioneer, to whatever depth your team may be able to pull it. Don't be afraid, there is no danger—but, as Poor Richard says,

"Plow deep, whilst sluggards sleep,  
Producing corn to sell and keep."

And again:

"Plow deep, plow deep, and deeper still,  
Each year an inch your till will fill."

#### Our Advertising Sheet.

We append to our present number an Advertising sheet, which, if sufficiently encouraged, we shall continue to publish as a part of the Farmer and Planter. This course will enable us to give our readers additional matter, more properly belonging to an agricultural work, than do advertisements, although, as is usually the case, confined to subjects relating to the interests of agriculture. Such advertisements, if they do not encroach too much on the main body of the work, are objected to by but few. But to relieve our paper from such objections (if any), and to allow us a wider range than that to which we have heretofore confined ourselves in advertising, we have concluded, although attended with additional labor and expense, to publish an additional sheet; and trust that not only our friends that have heretofore favored us in this way—but merchants and all others desiring to advertise, will give us, at least, a part of their patronage. Our paper circulates not only throughout our own State, but in adjoining States, as well as in Alabama and Mississippi. Hence our merchants in Charleston, Columbia and Hamburg, as well as in Augusta, Savannah, and other southern cities, will find it to their advantage, we think, to occupy a space in our advertising columns. Advertisements inserted at one dollar per square (twelve lines or less) for the first insertion, and seventy-five cents for each subsequent insertion. Liberal deductions will be made to liberal patrons.

#### Letters Received Since our Last.

Dr. S. M. D., Amount received, and papers sent, commencing with the volume as directed.

R. W., Chalkville S. C.—All in good time.

J. McM., Gowansville, S. C.—Credit entered. We are sorry too. Can't you send us *two* for the loss of one?

P. M., Palmetto, Miss.—We should have received notice earlier. Your letter with name of new subscriber (J. S.), &c., has not been re-

ceived—we send him the back numbers however.

"BROOMSEDGE," Big Branch, S. C.—Your welcome communication received, July 13.—we are sorry too late for the Aug. No. Appears in this.

Dr. B. F. K., Mountain Shoal, S. C.—Thanks old friend for your interest and good opinion. Should be pleased to have you contribute to our columns. The St. Mary's money is not at par with us. We have understood small bills are so in Augusta—if so—well.

H. C. N., Rossville, S. C.—Amount received and papers sent to T. M. B., as directed. Accept our thanks.

P. M., Nacberry C. H., S. C.—Amount received and placed to Dr. W. H. H.'s account, as directed.

J. J. B., Cypress Cottage, S. C.—Credit applied as directed. Thanks for your care for corns—the advice is no doubt good.

P. M., Demopolis, Ala.—Amount credited and papers sent to G. G. L., as requested.

J. P. B., New Market, S. C.—Thank you, good friend, for your very liberal offer. If every man in South Carolina possessed your soul, (and we believe there are many who do), not only the Farmer and Planter would be sustained, but even much help might be sent to our neighbors engaged in the same good cause. You owe us but little. The balance is placed to your credit. We have been trying to wake our friends up, but not many have yet brushed off the cob-webs and fogs. If such a call as yours has not the desired effect, the sleep we fear is to be perpetual, hence we must take the liberty to give them what you probably only intended for ourselves.

MESSRS. EDITORS:—I subscribed for your paper in a club, and suppose I paid for it at the time, but of this I am not certain. You will know. I send you five dollars—this will put the matter out of the way of injury to yourselves—you can place it to my credit. The paper must not go down. Rather than that shall take place, I for one will pay ten dollars annually for its support. Can't this plan be tried? Something must be done. Every farmer in the State should come to the rescue, and make one generous effort to save a paper devoted to their interest. You must wake them up—knock the cob-webs and fogs from their vision, and bid them do their duty. Patriotism demands it—State pride calls aloud. What, shall it be said the Planters and Farmers of South Carolina are too ignorant, or too niggardly of the "mighty dollar," to publish their own doings and thinkings? Forbid it, if you love your country or your calling. Yours, J. P. B.

"He that observeth the wind shall not sow; and he that regardeth the clouds shall not reap." But "he that tilleth the land shall have plenty of bread".—Ecls.